

Appl. No. 10/606,616

Response to Office Action having a mailing date of July 22, 2005

REMARKS

In view of the following remarks, Applicant requests reconsideration of the present Office Action.

New claims 21-31 are currently pending. Claims 1-8 are cancelled. Claims 9-20 are withdrawn.

1. Advantages of the Present Invention

The present invention solves a problem that results from the fabrication process described by Abildgaard *et al.*. The problem is the tendency to produce synthetic polymer articles, such as polyvinyl-based gloves with thin finger tips that are prone to pin-holes and breakage in use. This issue can be traced directly to the way the gloves molds are inverted with the fingers oriented upward according to the Abildgaard process, which moves directly from vertical down to vertical up before entering the oven. While helping to reduce heavy flow marks on the palm and sides of the fingers, rotation about an axis during the movement from the fingertips down to a vertical tips-up positions will not prevent thin fingertips. When the finger tips are uppermost, the liquid material at the tip of the fingers will flow down over the sides of the finger forms, leaving the points of the fingertips with insufficient plastisol material, hence thin and weakened. Weakness of fingertips has been a major concern of polyvinyl glove making, which the present invention attempts to address. The claimed invention allows one to adapt automatable assemblies to produce a thicker, stronger, puncture-resistant fingertips with substantially equal material thickness as that of another part of the glove. We have found that, according to the invention, one should preferably orient the fingertips of a coated mold away from either direct vertical up or down, while simultaneously rotating the mold to ensure a more even distribution of plastisol over the surface of the mold. It is desirable to have the former move continuously through a range of angles, in a series of undulating motions, while rotating about its axis.

2. §103 Rejection

The Patent Office rejects claims 1-8 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 3,117,341 (Abildgaard *et al.*) in view of U.S. Patent No. 3,541,609 (Povlacs *et al.*). The Patent Office alleges that although the '341 patent lacks a showing that the former is pivotally attached to a chain assembly and the former is pivoted to an angle less than 90° from a substantially vertical dipping orientation, the '609 patent, which is directed to making a glove from a rubber latex, teaches rotation and pivoting of the former to a desired angle to ensure a uniform thickness of latex on the former. Hence, the combination of the two references would make Applicant's claimed invention obvious to one of ordinary skill in the art. Further, the Patent Office also alleges that since Abildgaard *et al.* disclose a basic method of forming a glove that employs a preheated former, some amount of gelation would naturally and inherently occur just after the dipping and during draining steps, while the former is at an angle from vertical.

Applicant respectfully submits that the Patent Office has not established a *prima facie* case of obviousness for the following reasons. Neither patent reference viewed together suggest the claimed invention. The Patent Office has selectively read certain passages of the references for claimed elements,

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which appear similar to Applicant's process, but upon closer inspection does not make Applicant's invention obvious.

First, as Applicant has explained above, the Abildgaard patent describes a process that causes the problems, which the present invention is directed to solve. Abildgaard *et al.* describes moving the former to a vertical fingertip-up position. This is the problem, not a solution. Hence, the reference does not teach the present claimed invention, but rather is either silent or teaches away from the Applicant's claimed invention, which does not maintain the fingertips up in a near vertical position. The courts have recognized that an invention will not be deemed obvious when one or more of the combined references "teach away" from the invention.

Second, Applicant submits that one of ordinary skill in the art would not be motivated to combine a reference that addresses plastic films with another that relates to rubber latex membranes. A person of ordinary skill in the art will realize that the physical and rheology properties of the two kinds of materials – plasticizer, oil, or solvent-based thermoplastic polymers and rubber lattices – are very different from one another, and require that the materials be treated differently in order to distribute evenly over a former. In part, when a latex emulsion is applied to a former, the coagulants on the surface of the former, which is applied and dried prior, cause the latex to solidify on the former surface. Plastisols, which do not need and are not coagulable materials, are still rather free-flowing when first extracted from a bath and need exposure to a relatively high temperature to gel and solidify. The Patent Office's contention that heat from a preheated former would be sufficient to gel the plastisol is unfounded. A preheated former, as persons in the art understand, helps to improve viscosity for good flow and not for gelling of the plastisol because the temperature is too low. Typically, a former is preheated to a temperature of only up to about 200°F or less, which is insufficient to cause gellation. Such a technique is conventionally referred to as a "cold dipping" process. One understands that the cited patent refers to this type of technique, and not to the technique conventionally known as "hot dipping," which requires that the former is heated to a temperature well above the gel temperature of the plastisol or polymer formulation. Moreover, one can not achieve thin films, as desired, through a process of hot dipping because one would not be able to control the thickness of the plastisol layer. Hot dipping, for example, is used to make completely encapsulating, thick coatings over wire frames, which can be used in a variety of products, such as dishwasher racks or shelving.

The terminology used in the Abildgaard and Povlac references also indicates to a person of ordinary skill that the references are discussing two different things. One would not speak in terms of drying, beading, and curing of liquid latex, as the Povlac patent does, when discussing plastic films such as in plasticized polyvinyl-based gloves. Plastisols are understood to be a liquid with a 100% total solids content when applied. There is no drying step needed, since there is minimal to no water content to evaporate. Moreover, the Povlac reference repeatedly refers to drying not gelling. In contrast, a person of the art would refer to plastisol-based films as being fused after gellation. Curing involves forming chemical cross-linkages in the latex emulsion; whereas, fusion involves melting thermoplastic materials to form a largely uniform

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film membrane. Povlac *et al.* do not discuss fusion ovens, which operate at a higher temperature than that used in drying ovens for latex curing.

Furthermore, Povlac *et al.* describes washing and drying the former with water in a required online sequence before the fabrication cycle can be repeated (Col.6, lines 28-31). This is not the case with plastisol dipping. If one were to practice the process as Povlac *et al.* describe, the surface of the formers would become contaminated with a thin film deposit of mineral or inorganic residue that would result in significant defects in a thin, plastisol-polymer film. A person of ordinary skill will recognize that if one used a water-wash, one would also need to employ an acid rinse to remove any residue build-up. Hence, given that the terminology used by the Povlac reference is incongruent to the understanding of one of ordinary skill in the art when referring to plastisol-based materials, Applicant submits that the cited reference are combined improperly, since one of ordinary skill in the art would not look to combine teachings from references that deal with different kinds of materials, and teach significantly different processing techniques.

Third, assuming *arguendo* that one of ordinary skill would properly and reasonably combine the two cited references, the rejection is still overcome because neither the Abildgaard nor Povlac patents teach a step of maintaining the former mold in at least a second position while continuing to pivot and rotate while in a fusion oven, as the pending claims do. The second position being an angle between about 60° to about 90°, which can undulate during the gellation and fusion process.

In view of the foregoing remarks, Applicant respectfully requests that the Patent Office withdraw the rejection.

3. Conclusion

Based in the above amendments, remarks, and papers of record, Applicant believes that that the pending claims 21-31, are in allowable form and patentable over the prior art of record.

Applicant believes that no extension of time is necessary to make this Response timely. Should Applicant be in error, however, Applicant requests that the Office grant such time pursuant to 37 U.S.C. §1.136(a) as necessary to make this Response timely, and hereby authorizes the Office to charge any fees which are due to Kimberly-Clark Worldwide, Inc. deposit account number: 11-0875.

Please direct any questions or comments to Vincent T. Kung at: (770) 587-8606.

Respectfully submitted,

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Appl. No. 10/606,616

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CERTIFICATE OF TRANSMISSION

I, Laura L. Rubino, hereby certify that on September 9, 2005 this document is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (571) 273-8300.

By 

Laura L. Rubino